What is claimed is:

1. An apparatus generating a seek direction detecting signal for an optical pickup comprising:

a light dividing unit dividing an incident light beam into at least two beams including a main beam and a sub-beam so that at least two beam spots including a main beam spot and at least one sub-beam spot having an optical aberration, can be focused in the track direction of an optical disk, the light dividing unit providing that the direction of the optical aberration of the sub-beam spot can be the tangential direction of the optical disk;

an optical detector unit including:

a first optical detector having a plurality of light receiving portions for receiving the main beam, and converting the portions of the received beam into electrical signals independent of each other;

and a second optical detector receiving the sub-beam, and converting the portions of the received beam into electrical signals independent of each other, so as to receive the main beam and the sub-beam reflected from the optical disk; and

a signal processing portion including:

a first signal processing portion processing a track error signal from the signals output from the first optical detector; and

a second signal processing portion processing a track cross signal from the signals output from the second optical detector; and

a generator generating a seek direction detecting signal from the phase difference between the track cross signal and the track error signal.

2. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 1, wherein the second optical detector is divided into at least three portions in a direction corresponding to the radial direction of the optical disk, is divided into

two portions in a direction corresponding to the tangential direction of the optical disk, and has at least six separate areas.

3. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 2, wherein the second optical detector includes:

a first light receiving portion having a first outer light receiving portion, and a first inner light receiving portion, which are divided in a direction corresponding to the radial direction of the optical disk;

a second light receiving portion having a second outer light receiving portion, and a second inner light receiving portion, which are disposed to neighbor the first light receiving portion;

a third light receiving portion having a third outer light receiving portion, and a third inner light receiving portion, which are disposed to neighbor the second light receiving portion; and

a fourth light receiving portion having a fourth outer light receiving portion, and a fourth inner light receiving portion which are disposed to neighbor the first and third light receiving portions.

4. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 3, wherein the widths of the first, second, third, and fourth inner light receiving portions each are smaller than the radius of an incident beam spot focused on the optical detector.

5. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 4, wherein the sum of the widths of the first and fourth inner light receiving portions in a direction corresponding to the radial direction of the optical disk, and the sum of the widths of the second and third inner light receiving portions in the same

direction are each 0.2 to 0.8 times the diameter of an incident beam spot focused on the optical detector.

6. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 3, wherein, when the sum signal of signals output from the first and fourth inner light receiving portions is $S_{(A2+D2)}$, the sum signal of signals output from the second and third outer light receiving portions is $S_{(B1+C1)}$, the sum signal of signals output from the first and fourth outer light receiving portions is $S_{(A1+D1)}$, and the sum signal of signals output from the second and third inner light receiving portions is $S_{(B2+C2)}$, the second signal processing portion includes:

a first summing amplifier summing the signal $S_{(A2+D2)}$ and the signal $S_{(B1+C1)}$, and outputting a signal S_1;

a second summing amplifier summing the signal $S_{(A1+D1)}$ and the signal $S_{(B2+C2)}$, and outputting a signal S_2; and

a differential amplifier differentiating the signals S_1 and S_2, and outputting a track cross signal, and

the second signal processing portion is adapted to generate a seek direction detecting signal by using the phase difference between the track cross signal output from the differential amplifier and the track error signal output from the first signal processing portion.

7. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 6, wherein the second signal processing portion further includes a gain adjusting unit applying a predetermined gain coefficient K_1 to the signal S_1 output from the first summing amplifier, and outputting a signal $K_1 \times S_1$, and is adapted to sum the signal S_2 and the signal $K_1 \times S_1$ by the summing amplifier, and to output a track cross signal.

8. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 3, wherein the second signal processing portion includes:

a first summing amplifier summing signals output from the first and fourth inner light receiving portions, and outputting a signal S_3;

a second summing amplifier summing signals output from the second and third inner light receiving portions, and outputting a signal S_4;

a gain adjusting unit applying a predetermined gain coefficient K_2 to the signal S_3 output from the first summing amplifier, and outputting a signal $K_2 \times S_3$; and

a differential amplifier differentiating the signals S_4 and $K_2 \times S_3$, and outputting a track cross signal,

wherein the second signal processing portion is adapted to generate a seek direction detecting signal by using the phase difference between the track cross signal output from the differential amplifier and the track error signal output from the first signal processing portion.

9. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 3, wherein the second signal processing portion includes:

a first summing amplifier summing signals output from the first and fourth outer light receiving portions, and outputting a signal S_5;

a second summing amplifier summing signals output from the second and third outer light receiving portions, and outputting a signal S_6;

a gain adjusting unit applying a predetermined gain coefficient K_3 to the signal S_6 output from the second summing amplifier, and outputting a signal $K_3 \times S_6$; and

a differential amplifier differentiating the signals S_5 and $K_3 \times S_6$, and outputting a track cross signal, and

the second signal processing portion is adapted to generate a seek direction detecting signal by using the phase difference between the track cross signal output from the differential amplifier and the track error signal output from the first signal processing portion.

10. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 3, wherein when the signals output from the first, second, third, and fourth outer light receiving portions are S_{A1}, S_{B1}, S_{C1}, and S_{D1}, respectively, and the signals output from the first, second, third, and fourth inner light receiving portions are S_{A2}, S_{B2}, S_{C2}, and S_{D2}, respectively, and the predetermined gain coefficient applied to an input signal into a gain adjusting unit is K_4, the second signal processing portion is adapted to process the signals so as to satisfy the formula,

$$TCS = ((S_{A2} + S_{D2}) - (S_{B2} + S_{C2})) + K_4((S_{B1} + S_{C1}) - (S_{A1} + S_{D1}))$$

to output a track cross signal (TCS), and to generate a seek direction detecting signal by using a phase difference between the track cross signal (TCS) and the track error signal (TES) output from the first signal processing portion.

11. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 10, wherein the second signal processing portion includes:

a first summing amplifier summing the signals S_{A2} and S_{D2} output from the first and fourth inner light receiving portions, and outputting a signal S_3;

a second summing amplifier summing the signals S_{B2} and S_{C2} output from the second and third inner light receiving portions, and outputting a signal S_4;

a third summing amplifier summing the signals S_{A1} and S_{D1} output from the first and fourth outer light receiving portions, and outputting a signal S_5;

a fourth summing amplifier summing the signals S_{B1} and S_{C1} output from the second and third outer light receiving portions, and outputting a signal S_6;

a first differential amplifier differentiating the signals S_3 and S_4, and outputting a signal S_7;

a second differential amplifier differentiating the signals S_5 and S_6, and outputting a signal S_8;

a gain adjusting unit applying a predetermined gain coefficient K_4 to the signal S_8 output from the second differential amplifier, and outputting a signal $K_4 \times S_8$; and

a fifth summing amplifier summing the signals S_7 and $K_4 \times S_8$, and outputting a track cross signal.

12. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 2, wherein the second optical detector is divided into two portions in a direction corresponding to the tangential direction of the optical disk, is divided into three portions in a direction corresponding to the radial direction of the optical disk, and has six separate areas; and

the second optical detector includes: first, second, third, and fourth light receiving portions disposed at the outer portions thereof in a clockwise direction for receiving light independently; a fifth light receiving portion disposed between the first and fourth light receiving portions; and a sixth light receiving portion disposed between the second and third light receiving portions.

13. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 12, wherein when the sum signal of signals output from the second and third light receiving portions is $S_{(P2+P3)}$, the signal output from the fifth light receiving portion is S_{P5}, the sum signal of signals output from the first and fourth light receiving portions is $S_{(P1+P4)}$, and the signal output from the sixth light receiving portion is S_{P6}, the second signal processing portion includes:

a first summing amplifier summing the signal $S_{(P2+P3)}$ and the signal S_{P5}, and outputting a signal S_1;

a second summing amplifier summing the signal $S_{(P1+P4)}$ and the signal S_{P6}, and outputting a signal S_2; and

a differential amplifier differentiating the signals S_1 and S_2, and outputting a track cross signal,

wherein the second signal processing portion is adapted to generate a seek direction detecting signal by using the phase difference between the track cross signal output from the differential amplifier and the track error signal output from the first signal processing portion.

14. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 13, wherein the second signal processing portion further includes a gain adjusting unit applying a predetermined gain coefficient K_1 to the signal S_1 output from the first summing amplifier, and outputting a signal $K_1 \times S_1$, and is adapted to sum the signal S_2 and the signal $K_1 \times S_1$ by the summing amplifier, and to output a track cross signal.

15. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 12, wherein the second signal processing portion includes:

a gain adjusting unit applying a predetermined gain coefficient K_2 to the signal S_{P5} output from the fifth light receiving portion, and outputting a signal $K_2 \times S_{P5}$; and

a differential amplifier differentiating the signals S_{P6} output from the sixth light receiving portion, and outputting a track cross signal,

wherein the second signal processing portion is adapted to generate a seek direction detecting signal by using the phase difference between the track cross signal output from the differential amplifier and the track error signal output from the first signal processing portion.

16. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 12, wherein the second signal processing portion includes:

a first summing amplifier summing the signals output from the first and fourth light receiving portions, and outputting a signal S_5;

a second summing amplifier summing the signals output from the second and third light receiving portions, and outputting a signal S_6;

a gain adjusting unit applying a predetermined gain coefficient K_3 to the signal S_6 output from the second summing amplifier, and outputting a signal $K_3 \times S_6$; and

a differential amplifier differentiating the signals S_5 and $K_3 \times S_6$, and outputting a track cross signal,

wherein the second signal processing portion is adapted to generate a seek direction detecting signal by using the phase difference between the track cross signal output from the differential amplifier and the track error signal output from the first signal processing portion.

17. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 12, wherein when the signals output from the first, second, third, fourth, fifth, and sixth light receiving portions are S_{P1}, S_{P2}, S_{P3}, S_{P4}, S_{P5}, and S_{P6}, respectively, and the predetermined gain coefficient applied to an input signal into a gain adjusting unit is K_4, the second signal processing portion is adapted to process the signals so as to satisfy the formula,

$$TCS = (S_{P5} - S_{P6}) + K_4((S_{P2} + S_{P3}) - (S_{P1} + S_{P4}))$$

to output a track cross signal (TCS), and to generate a seek direction detecting signal by using a phase difference between the track cross signal (TCS) and the track error signal (TES) output from the first signal processing portion.

18. The apparatus for generating a seek direction detecting signal for an optical pickup as claimed in claim 17, wherein the second signal processing portion includes:

a first summing amplifier summing the signals S_{P1} and S_{P4} output from the first and fourth light receiving portions, and outputting a signal S_5;

a second summing amplifier summing the signals S_{P2} and S_{P3} output from the second and third light receiving portions, and outputting a signal S_6;

a first differential amplifier differentiating the signals S_{P5} and S_{P6}, and outputting a signal S_7;

a second differential amplifier differentiating the signals S_5 and S_6, and outputting a signal S_8;

a gain adjusting unit applying a predetermined gain coefficient K_4 to the signal S_8 output from the second differential amplifier, and outputting a signal $K_4 \times S_8$; and

a third summing amplifier summing the signals S_7 and $K_4 \times S_8$, and outputting a track cross signal (TCS).

19. An optical pickup apparatus to record to or from or reproduce to or from an optical disk, comprising:

a light beam emitting source;

a light dividing unit to divide the light beam into a main beam and a sub-beam disposed in a line to be incident on a common track of the optical disk, the sub-beam having an optical aberration that is disposed in the line to be incident on the common track;

an objective lens to focus the main beam and sub-beam on the optical disk;

light receiving portions to receive the main beam and sub-beam reflected from the optical disk and to output first signals from the reflected main beam and second signals from the reflected sub-beam;

a signal processing portion to process the first signals from the reflected main beam and to process the second signals from the reflected sub-beam; and

a signal generating portion to generate a seek direction detecting signal using the processed first signals and the processed second signals.

20. The optical pickup apparatus as claimed in claim 19, wherein

said light receiving portions comprise:

first light receiving portions to receive the reflected main beam and to output the first signals, and

second light receiving portions to receive the reflected sub-beam and to output the second signals, and

said signal processing portion comprises:

a first signal processing portion to output track error signals from the first signals, and

a second signal processing portion to output track cross signals from the second signals.

21. The optical pickup apparatus as claimed in claim 20, wherein

the first signal processing portion comprises

summing amplifiers that sum the first signals from the first light receiving portions located adjacent to each other in a tangential direction of the optical disk, and

a differential amplifier to differentiate the outputs from the summing amplifiers and to output a track error signal.

22. The optical pickup apparatus as claimed in claim 20, wherein said second signal processing portion comprises summing amplifiers that sum the second signals from the second light receiving portions.

23. The optical pickup apparatus as claimed in claim 22, wherein the second light receiving portion comprises inner and outer light receiving portions aligned along a radial direction of the optical disk, and the inner light receiving portions being disposed between the outer light receiving portions.

24. The optical pickup apparatus as claimed in claim 23, wherein the second signal processing portion further comprises a differential amplifier to differentiate a first summed pair of the second signals from a first pair of the inner and outer light receiving portions and a second summed pair of the second signals from a second pair of the inner and outer light receiving portions.

25. The optical pickup apparatus as claimed in claim 23, wherein the second signal processing portion further comprises:

a first differential amplifier to differentiate a first and second summed pair of the second signals from the outer light receiving portions,

a second differential amplifier to differentiate a third and fourth summed pair of the second signals from the inner light receiving portions,

a gain control unit to gain control the differentiated second signals received from the first differential amplifier, and

a summing amplifier to sum the differentiated second signals from the second differential amplifier with the gain controlled second signals from the gain control unit to generate the track cross signal.

26. The optical pickup apparatus as claimed in claim 22, wherein

the second light receiving portions further comprise:

first and second light receiving portions disposed in a tangential direction of the optical disk,

third and fourth light receiving portions disposed in a radial direction of the optical disk with respect to the first and second light receiving, and

fifth and sixth light receiving portions disposed between the first and second light receiving portions and the third and fourth light receiving portions respectively, and

the second signal processing portion processes a track cross signal by differentiating a first sum of the second signals output from the second, third, and fifth light receiving portions and a second sum of the second signals output from the first, fourth, and sixth light receiving portions.

27. The optical pickup apparatus as claimed in claim 26, wherein the signal generating portion generates the seek direction detecting signal by comparing a phase difference between the track cross signal and the track error signal.

28. The apparatus as claimed in claim 23, wherein a combined width of the inner light receiving portions is 0.2 to 0.8 times a diameter of a beam spot formed by the reflected sub-beam on the optical disk.

29. The optical pickup apparatus as claimed in claim 22, wherein the sub-beam follows the main beam along the common track.

30. The optical pickup apparatus as claimed in claim 22, wherein the main beam follows the sub-beam along the common track.

31. The optical pickup apparatus as claimed in claim 22, wherein

said light dividing unit further divides the light beam into an additional sub-beam disposed in the line to be incident on the common track, the additional sub-beam having an optical aberration that is also disposed in the line to be incident on the common track, and

the main beam is incident between the sub-beam and sub-beam along the common track.

32. The optical pickup apparatus as claimed in claim 27, wherein the sub-beam follows the main beam along the common track.

33. The optical pickup apparatus as claimed in claim 27, wherein the main beam follows the sub-beam along the common track.

34. The optical pickup apparatus as claimed in claim 27, wherein

said light dividing unit further divides the light beam into an additional sub-beam disposed in the line to be incident on the common track, the additional sub-beam having an optical aberration that is also disposed in the line to be incident on the common track, and

the main beam is incident between the two sub-beams along the common track.

35. A method of generating a seek direction detecting signal, comprising:

splitting a light beam into a main beam and a sub-beam disposed in a line incident on a common track of an optical disk, where the sub-beam further comprises an optical aberration disposed in the line and incident on the common track;

reflecting the main beam and sub-beam off the optical disk; and

generating the seek direction detecting signal based upon the reflected main beam and sub-beam.

36. The method as claimed in claim 35, wherein said generating the seek direction detecting signal comprises:

generating a track cross signal based upon the reflected sub-beam;

generating a track error signal based upon the reflected main beam; and

generating the seek direction detecting signal based upon the track cross signal and the track error signal.

37. The method as claimed in claim 35, wherein the track cross signal is generated without the reflected main beam.

38. A method of generating a seek direction detecting signal for an optical pickup comprising:

dividing an incident light beam into at least two beams including a main beam and at least one sub-beam, said at least one sub-beam having an optical aberration;

focusing said main beam and said at least one sub-beam having an optical aberration in the track direction of an optical disk such that the direction of the optical aberration of the sub-beam spot is tangential to the optical disk;

detecting the main beam reflected off of the optical disk and coverting the detected main beam into independent electrical signals;

detecting the sub-beam reflected off of the optical disk and converting the detected sub-beam into independent electrical signals;

processing a track error signal from the electrical signals obtained from the converted detected main beam;

processing a track cross signal from the electrical signals obtained from the converted detected sub-beam; and

generating a seek direction detecting signal from the phase difference between the track cross signal and the track error signal.